(vii) Identification of bulb used in the compliance test.

(4) If it is a flashing light, have its intensity determined by the formula:

$$Ie=G/(0.2+t2-t1)$$

Where

Ie=Luminous Intensity.
G=Integral of Idt evaluated between the limits of t1 and t2.
t1=Time in seconds of the beginning of the flash.
t2=Time in seconds of the end of the flash.
I=Instantaneous intensity during the flash.

NOTE: The limits, t1 and t2, are to be chosen so as to maximize Ie.

(e) *Installation of navigation lights.* Each navigation light must:

(1) Be installed so that its location and its angle of visibility meet the applicable navigation rules;

(2) Except as permitted by the applicable navigation rules, be arranged so that light from a navigation light is not obstructed by any part of; the vessel's structure or rigging;

(3) Be wired by a short length of heavy-duty, flexible cable to a watertight receptacle outlet next to the light or, for permanently mounted fixtures, by direct run of fixed cable; and

(4) If it is a double-lens, two-lamp type, have each lamp connected to its branch circuit conductors either by an individual flexible cable and watertight receptacle plug or, for permanently mounted fixtures, by an individual direct run of fixed cable.

[CGD 74–125A, 47 FR 15236, Apr. 8, 1982, as amended by CGD 94–108, 61 FR 28282, June 4, 1996; 61 FR 33045, June 26, 1996; 62 FR 23909, May 1, 1997; USCG–2003–16630, 73 FR 65199, Oct. 31, 2008]

§ 111.75–18 Signaling lights.

Each self-propelled vessel over 150 gross tons when engaged on an international voyage must have on board an efficient daylight signaling lamp that may not be solely dependent upon the vessel's main source of electrical power and that meets the following:

(a) The axial luminous intensity of the beam must be at least 60,000 candelas.

(b) The luminous intensity of the beam in every direction within an angle of 0.7 degrees from the axial must be at least 50 percent of the axial luminous intensity.

[CGD 94–108, 61 FR 28282, June 4, 1996]

§ 111.75–20 Lighting fixtures.

(a) The construction of each lighting fixture for a non-hazardous location must meet UL 1598A or IEC 92–306 (both incorporated by reference; see 46 CFR 110.10–1).

(b) Each fixture globe, lens, or diffuser must have a high strength guard or be made of high strength material, except in an accommodation space, navigating bridge, gyro room, radio room, galley, or similar space where it is not subject to damage.

(c) No fixture may be used as a connection box for a circuit other than the branch circuit supplying the fixture.

(d) Lighting fixtures must be installed as follows:

(1) Each fixture in the weather or in a location exposed to splashing water must be watertight. Each fixture in a damp or wet location must at least be dripproof.

(2) Each fixture and lampholder must be fixed. A fixture must not be supported by the screw shell of a lampholder.

(3) Each pendent-type fixture must be suspended by and supplied through a threaded, rigid conduit stem.

(4) Each tablelamp, desklamp, floorlamp, and similar equipment must be secured in place so that it cannot be displaced by the roll or pitch of the vessel.

(e) Nonemergency and decorative interior-lighting fixtures in environmentally protected, nonhazardous locations need meet only the applicable UL type-fixture standards in UL 1598 (incorporated by reference; see 46 CFR 110.10–1) and UL 1598A marine supplement or the standards in IEC 92–306. These fixtures must have vibration clamps on fluorescent tubes longer than 102 cm (40 inches), secure mounting of glassware, and rigid mounting.

[CGD 74–125A, 47 FR 15236, Apr. 8, 1982, as amended by CGD 94–108, 61 FR 28283, June 4, 1996; 61 FR 36787, July 12, 1996; 62 FR 23909, May 1, 1997; USCG–2003–16630, 73 FR 65199, Oct. 31, 2008]